

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	109	suspension same plastid	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/02/15 16:16
L2	191	suspension same chloroplast	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/02/15 16:20

FILE 'HOME' ENTERED AT 18:08:58 ON 15 FEB 2006

=> file biosis caplus caba agricola

=> s suspension and (plastid or chloroplast)

L1 1492 SUSPENSION AND (PLASTID OR CHLOROPLAST)

=> s l1 and transform?

L2 77 L1 AND TRANSFORM?

=> duplicate remove l2

DUPLICATE PREFERENCE IS 'BIOSIS, CAPLUS, CABA, AGRICOLA'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L2

L3 49 DUPLICATE REMOVE L2 (28 DUPLICATES REMOVED)

=> d ti 1-49

L3 ANSWER 1 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Chlorophyllous totipotent plant cell cultures

L3 ANSWER 2 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Characterization of **transformed** Arabidopsis with altered alternative oxidase levels and analysis of effects on reactive oxygen species in tissue.

L3 ANSWER 3 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Induction of neutralizing antibodies by a tobacco **chloroplast**-derived vaccine based on a B cell epitope from canine parvovirus.

L3 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI High-frequency **transformation** of undeveloped plastids in tobacco **suspension** cells

L3 ANSWER 5 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Expression of Vitreoscilla haemoglobin in tobacco cell cultures relieves nitrosative stress in vivo and protects from NO in vitro

L3 ANSWER 6 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI High-frequency **transformation** of undeveloped plastids in tobacco **suspension** cells.

L3 ANSWER 7 OF 49 CABA COPYRIGHT 2006 CABI on STN

TI Proceedings of the 42nd Kasetsart University Annual Conference, Kasetsart, Thailand, 3-6 February 2004.

L3 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Molecular farming of industrial proteins in plants

L3 ANSWER 9 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI High-frequency **transformation** of undeveloped plastids in tobacco **suspension** cells.

L3 ANSWER 10 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI The potato granule bound starch synthase **chloroplast** transit peptide directs recombinant proteins to plastids.

L3 ANSWER 11 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Use of red fluorescent protein from *Discosoma* sp. (dsRED) as a reporter for plant gene expression.

L3 ANSWER 12 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Photosynthetic properties of two different soybean **suspension** cultures.

L3 ANSWER 13 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Targeting a nuclear anthranilate synthase alpha-subunit gene to the tobacco **plastid** genome results in enhanced tryptophan biosynthesis. Return of a gene to its pre-endosymbiotic origin.

L3 ANSWER 14 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Methods and means for expression of mammalian polypeptides in monocotyledonous plants

L3 ANSWER 15 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Increase of pigments, plastoglobuli and the mRNA of a 23 kDa polypeptide of PSII oxygen-evolving complex in a transgenic tobacco cell line RP3/2.

L3 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Transgenic monocot plant with increased osmoprotectant content to enhance water deficit-tolerance

L3 ANSWER 17 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Evidence for posttranscriptional activation of  $\gamma$ -glutamylcysteine synthetase during plant stress responses

L3 ANSWER 18 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Molecular cloning, characterization and expression of cDNA encoding phosphoserine aminotransferase involved in phosphorylated pathway of serine biosynthesis from spinach

L3 ANSWER 19 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Tobacco (*Nicotiana tabacum*) nuclear transgenics with high copy number can express NPTII driven by the **chloroplast** psbA promoter.

L3 ANSWER 20 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI C-terminal polypeptides are necessary and sufficient for in vivo targeting of transiently-expressed proteins to peroxisomes in **suspension**-cultured plant cells.

L3 ANSWER 21 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Method and apparatus for separation of substances in dilute solutions or suspensions

L3 ANSWER 22 OF 49 CABA COPYRIGHT 2006 CABI on STN

TI Influence of high carbohydrate content on the activity of plastidic and cytosolic isoenzyme pairs in photosynthetic tissues.

L3 ANSWER 23 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI MOLECULAR CLONING OF WHEAT DIHYDRODIPICOLINATE SYNTHASE.

L3 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10

TI Reduction of **chloroplast** DNA content in *Solanum nigrum* **suspension** cells by treatment with **chloroplast** DNA synthesis inhibitors

L3 ANSWER 25 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI OPTIMIZATION OF DELIVERY OF FOREIGN DNA INTO HIGHER-PLANT CHLOROPLASTS.

L3 ANSWER 26 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI PRODUCTION OF A TRIPLE MUTANT CHLOROPHYLL-DEFICIENT STREPTOMYCIN AND KANAMYCIN-RESISTANT NICOTIANA-TABACUM AND ITS USE IN INTERGENERIC SOMATIC HYBRID FORMATION WITH SOLANUM-MELONGENA.

L3 ANSWER 27 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI UNCOUPLING OF PHOTOPHOSPHORYLATION BY TRIETHYL LEAD GENERATED FROM TETRAETHYL LEAD IN ILLUMINATED CHLOROPLASTS.

L3 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Oscillatory phenomena in chloroplasts conditioned by an acid-base shift. I. Kinetics of ATP formation

L3 ANSWER 29 OF 49 CABA COPYRIGHT 2006 CABI on STN

TI Investigation of the cytoplasmic genomes of tobacco.

L3 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Direct gene transfer into plastids and mitochondria of plant protoplasts without use of pathogens

L3 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Photoinduced changes in the intracellular level of ATP in dark-adapted Euglena with different levels of photosynthetic activity

L3 ANSWER 32 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI RELATIONS BETWEEN THE **PLASTID** GENE DOSAGE AND THE LEVELS OF 16S RIBOSOMAL RNA AND RBC-L GENE TRANSCRIPTS DURING AMYLOPLAST TO **CHLOROPLAST** CHANGE IN MIXOTROPHIC SPINACH CELL SUSPENSIONS.

L3 ANSWER 33 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Esterification of exogenous chlorophyllide in a cell-free system prepared from green barley leaves

L3 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Spin probe study of cation-induced changes of intact membranes of **chloroplast** thylakoids

L3 ANSWER 35 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Electron transport and coupled processes in subchloroplast fractions enriched by photosystem I in the presence of tetramethyl-p-phenylenediamines

L3 ANSWER 36 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI HETEROTROPHIC TOBACCO NICOTIANA-TABACUM CULTIVAR XANTHI CELL CULTURES DURING GREENING 1. **CHLOROPLAST** AND CELL DEVELOPMENT.

L3 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Intracellular localization of the system of pesticide metabolism and its role for phytohygienic normalization

L3 ANSWER 38 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI PHOTO INDUCED REDOX **TRANSFORMATION** OF PHENAZINE METHO SULFATE IN A **SUSPENSION** OF PREPARATIONS FROM PHOTOSYNTHESIZING SUBSTANCES.

L3 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Determination of the functional activity of preparations obtained from photosynthesizing organisms

L3 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI A new non-photoreducible protochlorophyll(ide)-protein: P-649-642 from cucumber cotyledons. NADPH mediation of its **transformation** to photoreducible P-657-650

L3 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Structure and function of **chloroplast** proteins. Part 44. Biosynthetic mechanism of glycolate in Chromatium 6. Glycolate formation and metabolism under low oxygen pressure

L3 ANSWER 42 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The interaction of magnesium ion and pH in **chloroplast** processes

L3 ANSWER 43 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI **CHLOROPLAST** DIFFERENTIATION IN CULTURED TOBACCO CELLS IN-VITRO PROTEIN SYNTHESIS EFFICIENCY OF PLASTIDS AT VARIOUS STAGES OF THEIR EVOLUTION.

L3 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Effect of cationic and anionic chain compounds on absorption spectra and photochemical activities of chloroplasts

L3 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

TI Dynamic properties of the pigment matrix of the photosystem II in higher plants

L3 ANSWER 46 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Kinetics of redox **transformations** of cytochrome components in the electron transport chain of photosynthesis

L3 ANSWER 47 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Properties of complexes formed in vitro by photosynthetic pigments

L3 ANSWER 48 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Formation of active reduced compounds that survive the illumination period in colloidal solutions of green leaf matter

L3 ANSWER 49 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 TI INTERGENERIC SOMATIC HYBRIDIZATION IN GRAMINEAE SOMATIC HYBRID PLANTS BETWEEN TALL FESCUE FESTUCA-ARUNDINACEA SCHREB. AND ITALIAN RYEGRASS LOLIUM-MULTIFLORUM LAM.

=> d bib abs 4 9 12 13 19 30

L3 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:825204 CAPLUS  
 DN 141:308643  
 TI High-frequency **transformation** of undeveloped plastids in tobacco **suspension** cells  
 IN Langbecker, Camri; Staub, Jeffrey M.; Ye, Guangning  
 PA Monsanto Technology Llc, USA  
 SO U.S. Pat. Appl. Publ., 8 pp.  
 CODEN: USXXCO

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004199937	A1	20041007	US 2004-708882	20040330
PRAI	US 2003-320078P	P	20030401		

AB A method is provided for **transforming** undeveloped plastids in tobacco **suspension** culture to produce a transplastomic plant. The present invention provides an efficient and reproducible procedure for stable **plastid transformation** of dark-grown tobacco **suspension** cells. This **transformation** system has a number of useful advantages, including easy maintenance of stock cultures and the ability for high throughput with less labor and more consistency than observed with leaf material. Particle size influenced the frequency of **plastid** and nuclear **transformation**.

L3 ANSWER 9 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 AN 2003:313630 BIOSIS  
 DN PREV200300313630  
 TI High-frequency **transformation** of undeveloped plastids in tobacco **suspension** cells.  
 AU Langbecker, C. L. [Reprint Author]; Ye, Guang-Ning [Reprint Author]; Hajdukiewicz, Peter T. J. [Reprint Author]; Xu, Charles W. [Reprint Author]; Armstrong, Charles L. [Reprint Author]; Staub, Jeffrey M. [Reprint Author]  
 CS Monsanto Company, 700 Chesterfield Parkway, West, Chesterfield, MO, 63017, USA  
 camri.l.langbecker@monsanto.com  
 SO In Vitro Cellular & Developmental Biology Plant, (Spring 2003) Vol. 39, No. Abstract, pp. 47-A. print.  
 Meeting Info.: Congress on In Vitro Biology. Portland, Oregon, USA. May 31-June 04, 2003. Society for In Vitro Biology.  
 ISSN: 1054-5476 (ISSN print).  
 DT Conference; (Meeting)

Conference; (Meeting Poster)  
Conference; Abstract; (Meeting Abstract)

LA English  
ED Entered STN: 2 Jul 2003  
Last Updated on STN: 2 Jul 2003

L3 ANSWER 12 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN DUPLICATE 5

AN 2001:286292 BIOSIS  
DN PREV200100286292  
TI Photosynthetic properties of two different soybean **suspension**  
cultures.  
AU Zhang, Xing-Hai; Widholm, Jack M.; Portis, Archie R., Jr. [Reprint author]  
CS Photosynthesis Research Unit, Agricultural Research Service, US Department  
of Agriculture, Urbana, IL, 61801, USA  
arportis@uiuc.edu  
SO Journal of Plant Physiology, (March, 2001) Vol. 158, No. 3, pp. 357-365.  
print.  
CODEN: JPPHEY. ISSN: 0176-1617.

DT Article  
LA English  
ED Entered STN: 13 Jun 2001  
Last Updated on STN: 19 Feb 2002

AB The photosynthetic properties of two commonly used **suspension**  
cultured lines, embryogenic and photoautotrophic (PA, SB-1 line) cells of  
soybean (Glycine max (L.) Merr.) were characterized. We found that  
compared to the dark green PA cells, the light green embryogenic cells  
contained fewer and smaller plastids with less-developed thylakoid  
membranes. The embryogenic cells also contained much lower contents of  
both chlorophyll and the large subunit of ribulose-1,5-bisphosphate  
carboxylase/oxygenase (Rubisco; EC 4.1.1.39) protein, an undetectable  
level of Rubisco small subunit protein, and a very low rate of  
photosynthesis. While the DNA contents of the nuclear genomes were  
similar in these two types of cultured cells, the embryogenic cells  
possessed a markedly lower content of **plastid** DNA. The  
18-year-old PA **suspension** culture, SB-1, continues to evolve  
with higher Rubisco and **plastid** DNA contents than leaves, and  
with small decreases in nuclear DNA content that appears to mimic changes  
in chromosome numbers. These findings may prove useful in the application  
of **plastid transformation**, particularly when non-leaf  
or non-green tissues must be used as targets for **transformation**  
and plant regeneration.

L3 ANSWER 13 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
AN 2001:492701 BIOSIS  
DN PREV200100492701  
TI Targeting a nuclear anthranilate synthase alpha-subunit gene to the  
tobacco **plastid** genome results in enhanced tryptophan  
biosynthesis. Return of a gene to its pre-endosymbiotic origin.  
AU Zhang, Xing-Hai; Brotherton, Jeffrey E.; Widholm, Jack M.; Portis, Archie  
R., Jr. [Reprint author]  
CS Photosynthesis Research Unit, United States Department of  
Agriculture-Agricultural Research Service, University of Illinois, Urbana,  
IL, 61801, USA  
arportis@uiuc.edu  
SO Plant Physiology (Rockville), (September, 2001) Vol. 127, No. 1, pp.  
131-141. print.  
CODEN: PLPHAY. ISSN: 0032-0889.

DT Article  
LA English  
ED Entered STN: 24 Oct 2001  
Last Updated on STN: 23 Feb 2002

AB Anthranilate synthase (AS), the control enzyme of the tryptophan (Trp)  
biosynthetic pathway, is encoded by nuclear genes, but is transported into  
the plastids. A tobacco (Nicotiana tabacum) cDNA (ASA2) encoding a  
feedback-insensitive tobacco AS alpha-subunit was **transformed**  
into two different sites of the tobacco **plastid** genome through

site-specific insertion to obtain transplastomic plants with normal phenotype and fertility. A high and uniform level of ASA2 mRNA was observed in the transplastomic plants but not in the wild type. Although the plants with the transgene insertion at ndhF-trnL only expressed one size of the ASA2 mRNA, the plants with the transgene incorporated into the region between accD and open reading frame (ORF) 184 exhibited two species of mRNA, apparently due to readthrough. The transplastomic plants exhibited a higher level of AS alpha-subunit protein and AS enzyme activity that was less sensitive to Trp-feedback inhibition, leading to greatly increased free Trp levels in leaves and total Trp levels in seeds. Resistance to an AS inhibitor, 5-methyl-Trp, was found during seed germination and in **suspension** cultures of the transplastomic plants. The resistance to the selection agent spectinomycin and to 5-methyl-Trp was transmitted maternally. These results demonstrate the feasibility of modifying the biosynthetic pathways of important metabolites through **transformation** of the **plastid** genome by relocating a native gene from the nucleus to the **plastid** genome. Very high and uniform levels of gene expression can be observed in different lines, probably due to the identical insertion sites, in contrast to nuclear **transformation** where random insertions occur.

L3 ANSWER 19 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 AN 1996:243307 BIOSIS  
 DN PREV199698791436  
 TI Tobacco (Nicotiana tabacum) nuclear transgenics with high copy number can express NPTII driven by the **chloroplast** psbA promoter.  
 AU Ye, Guang-Ning; Pang, Sheng-Zhi; Sanford, John C. [Reprint author]  
 CS Monsanto Company, 700 Chesterfield Parkway N., St. Louis, MO 63198, USA  
 SO Plant Cell Reports, (1996) Vol. 15, No. 7, pp. 479-483.  
 CODEN: PCRPD8. ISSN: 0721-7714.  
 DT Article  
 LA English  
 ED Entered STN: 28 May 1996  
 Last Updated on STN: 28 May 1996  
 AB A **chloroplast** expression vector containing the NPTII gene under the control of a psbA promoter (psbA-NPTII) was constructed, and was biolistically delivered into both **suspension** cells and leaf strips of tobacco (Nicotiana tabacum). Analyses of subsequently recovered kanamycin-resistant transgenic plants indicate that the psbA-NPTII gene was not located in the **chloroplast**, but was in the nucleus in very high copy number. This conclusion was based upon results from: (1) Southern hybridization analyses of **chloroplast** and nuclear DNAs using NPTII, **chloroplast**-marker, and nuclear-marker probes; (2) pulse-field gel electrophoresis; and (3) kanamycin screening of sexual progenies. This study suggests that the nuclear expression of the NPTII gene may have been associated with many copies of the psbA-NPTII construction. Very high copy number in the nucleus might either allow NPTII expression from the otherwise inadequate psbA promoter, or might increase the chance of recombining with upstream tobacco regulatory sequences.

L3 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1987:612989 CAPLUS  
 DN 107:212989  
 TI Direct gene transfer into plastids and mitochondria of plant protoplasts without use of pathogens  
 IN Potrykus, Ingo; Shillito, Raymond Douglas; Chilton, Mary Dell  
 PA Ciba-Geigy A.-G., Switz.  
 SO Eur. Pat. Appl., 22 pp.  
 CODEN: EPXXDW

DT Patent  
 LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 223247.	A2	19870527	EP 1986-116056	19861120

genetic studies possible which were not possible before.

=> logoff hold

STN INTERNATIONAL SESSION SUSPENDED AT 18:19:11 ON 15 FEB 2006

Connecting via Winsock to STN

FILE 'HOME' ENTERED AT 16:44:43 ON 17 MAR 2006

=> file biosis caplus caba agricola

=> s suspension same tobacco

L1 0 SUSPENSION SAME TOBACCO

=> s suspension and tobacco

L2 5422 SUSPENSION AND TOBACCO

=> s l2 and (plastid or chloroplast)

L3 192 L2 AND (PLASTID OR CHLOROPLAST)

=> duplicate remove l3

L4 119 DUPLICATE REMOVE L3 (73 DUPLICATES REMOVED)

=> d ti 1-50

L4 ANSWER 1 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Recombinant human tissue transglutaminase produced into **tobacco**  
**suspension** cell cultures is active and recognizes autoantibodies  
in the serum of coeliac patients.

L4 ANSWER 2 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI O-2.(-) burst of **tobacco** leaves triggered by Erwinia carotovora  
subsp carotovora inoculation.

L4 ANSWER 3 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Induction of neutralizing antibodies by a **tobacco**  
**chloroplast**-derived vaccine based on a B cell epitope from canine  
parvovirus.

L4 ANSWER 4 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3  
TI Assessment of lovastatin application as tool in probing cytokinin-mediated  
cell cycle regulation

L4 ANSWER 5 OF 119 CABA COPYRIGHT 2006 CABI on STN  
TI **Plastid** stromules: video microscopy of their outgrowth,  
retraction, tensioning, anchoring, branching, bridging, and tip-shedding.

L4 ANSWER 6 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI High-frequency transformation of undeveloped plastids in **tobacco**  
**suspension** cells

L4 ANSWER 7 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Signal peptide-dependent targeting of a rice a-amylase and cargo proteins  
to plastids and extracellular compartments of plant cells.

L4 ANSWER 8 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Induction of apoptosis in purified nuclei from **tobacco-**  
**suspension** cells by cytochrome b6/f complex

L4 ANSWER 9 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN



EP 223247	A3	19891102		
R: AT, BE, DE, ES, FR, GR, IT, LU, NL, SE				
GB 2183660	A1	19870610	GB 1986-27520	19851120
GB 2183660	B2	19900110		
FI 8604720	A	19870523	FI 1986-4720	19861119
DK 8605595	A	19870523	DK 1986-5595	19861121
NO 8604681	A	19870525	NO 1986-4681	19861121
AU 8665555	A1	19870528	AU 1986-65555	19861121
CN 86107908	A	19870930	CN 1986-107908	19861121
ZA 8608828	A	19870930	ZA 1986-8828	19861121
DD 258827	A5	19880803	DD 1986-296538	19861121
JP 62155093	A2	19870710	JP 1986-279546	19861122
PRAI US 1985-801014	A	19851122		

AB DNA is introduced directly into plastids and mitochondria of plant protoplasts without the use of pathogens. Plasmid pUCH1, a pUC8 derivative containing the atrazine resistance gene psbA from *Amaranthus hybridus* and the chloramphenicol acetyltransferase gene, both under control of the psbA promoter, was constructed. Protoplasts from *Nicotiana tabacum*, *Brassica rapa*, or *Lolium multiflorum* were suspended in an osmotically stabilized medium, mixed with pUCH1, and incubated 30 min at .apprx.25°. The cell **suspension** was then heat shocked (5 min at 45°, then 10 s at 0°), PEG (mol. weight 6000) was added to 13%, and the **suspension** was then subjected to electroporation (3 pulses of 1000-3000 V within 10 s). **Transformation** frequency was 10<sup>-3</sup>-10<sup>-2</sup>, but this could be increased to .apprx.1-2% under appropriate circumstances.

=> d bib abs 3 6

L3 ANSWER 3 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
AN 2006:105109 BIOSIS  
DN PREV200600110578  
TI Induction of neutralizing antibodies by a tobacco **chloroplast**  
-derived vaccine based on a B cell epitope from canine parvovirus.  
AU Molina, Andrea; Veramendi, Jon [Reprint Author]; Hervas-Stubbs, Sandra  
CS Univ Publ Navarra, CSIC, Inst Agrobiotecnol, Campus Arrosadia, Pamplona  
31006, Spain  
jon@unavarra.es  
SO Virology, (NOV 25 2005) Vol. 342, No. 2, pp. 266-275.  
CODEN: VIRLAX. ISSN: 0042-6822.  
DT Article  
LA English  
ED Entered STN: 8 Feb 2006  
Last Updated on STN: 8 Feb 2006  
AB The 21,21 epitope of the VP2 protein from the canine parvovirus (CPV),  
fused to the cholera toxin B subunit (CTB-2L21), was expressed in  
transgenic tobacco chloroplasts. Mice and rabbits that received  
protein-enriched leaf extracts by parenteral route produced high titers of  
anti-2L21 antibodies able to recognize the VP2 protein. Rabbit sera were  
able to neutralize CPV in an in vitro infection assay with an efficacy  
similar to the anti-2L21 neutralizing monoclonal antibody 3C9. Anti-2L21  
IgG and seric IgA antibodies were elicited when mice were gavaged with a  
**suspension** of pulverized tissues from CTB-2L21 **transformed**  
plants. Combined immunization (a single parenteral injection followed by  
oral boosters) shows that oral boosters help to maintain the anti-2L21 IgG  
response induced after a single injection, whereas parenteral  
administration of the antigen primes the subsequent oral boosters by  
promoting the induction of anti-2L21 seric IgA antibodies. Despite the  
induced Immoral response, antibodies elicited by oral delivery did not  
show neutralizing capacity in the in vitro assay. The high yield of the  
fusion protein permits the preparation of a high number of vaccine doses  
from a single plant and makes feasible the oral vaccination using a small  
amount of crude plant material. However, a big effort has still to be  
done to enhance the protective efficacy of subunit vaccines by the oral  
route. (c) 2005 Elsevier Inc. All rights reserved.

L3 ANSWER 6 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 AN 2004:301929 BIOSIS  
 DN PREV200400302417  
 TI High-frequency **transformation** of undeveloped plastids in tobacco  
**suspension** cells.  
 AU Langbecker, Camri L.; Ye, Guang-Ning; Broyles, Debra L.; Duggan, Lisa L.;  
 Xu, Charles W.; Hajdukiewicz, Peter T. J.; Armstrong, Charles L.; Staub,  
 Jeffrey M. [Reprint Author]  
 CS Monsanto Co, Chesterfield, MO, 63017, USA  
 jeffrey.m.staub@monsanto.com  
 SO Plant Physiology (Rockville), (May 2004) Vol. 135, No. 1, pp. 39-46.  
 print.  
 ISSN: 0032-0889 (ISSN print).  
 DT Article  
 LA English  
 ED Entered STN: 30 Jun 2004  
 Last Updated on STN: 30 Jun 2004  
 AB Although leaf **chloroplast transformation** technology  
 was developed more than a decade ago, no reports exist of stable  
**transformation** of undeveloped plastids or other specialized  
**plastid** types, such as proplastids, etioplasts, or amyloplasts.  
 In this work we report development of a dark-grown tobacco  
**suspension** cell model system to investigate the  
**transformation** potential of undeveloped plastids. Electron  
 microscope analysis confirmed that the **suspension** cells carry  
 plastids that are significantly smaller (approximately 50-fold less in  
 volume) and have a very different subcellular localization and  
 developmental state than leaf cell chloroplasts. Using antibiotic  
 selection in the light, we demonstrated that both **plastid** and  
 nuclear **transformation** of these cell suspensions is efficient  
 and reproducible, with **plastid transformation**  
 frequency at least equal to that of leaf **chloroplast**  
**transformation**. Homoplasmic **plastid**  
**transformants** are readily obtained in cell colonies, or in  
 regenerated plants, providing a more consistent and versatile model than  
 the leaf **transformation** system. Because of the uniformity of  
 the cell **suspension** model, we could further show that growth  
 rate, selection scheme, particle size, and DNA amount influence the  
 frequency of **transformation**. Our results indicate that the  
 rate-limiting steps for nuclear and **plastid**  
**transformation** are different, and each must be optimized  
 separately. The **suspension** cell system will be useful as a  
 model for understanding **transformation** in those plant species  
 that utilize dark-grown embryogenic cultures and for characterizing the  
 steps that lead to homoplasmic **plastid transformation**.

=> d bib abs 30 25

L3 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1987:612989 CAPLUS  
 DN 107:212989  
 TI Direct gene transfer into plastids and mitochondria of plant protoplasts  
 without use of pathogens  
 IN Potrykus, Ingo; Shillito, Raymond Douglas; Chilton, Mary Dell  
 PA Ciba-Geigy A.-G. , Switz.  
 SO Eur. Pat. Appl., 22 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 223247	A2	19870527	EP 1986-116056	19861120
	EP 223247	A3	19891102		
	R: AT, BE, DE, ES, FR, GR, IT, LU, NL, SE				
	GB 2183660	A1	19870610	GB 1986-27520	19851120

GB 2183660	B2	19900110		
FI 8604720	A	19870523	FI 1986-4720	19861119
DK 8605595	A	19870523	DK 1986-5595	19861121
NO 8604681	A	19870525	NO 1986-4681	19861121
AU 8665555	A1	19870528	AU 1986-65555	19861121
CN 86107908	A	19870930	CN 1986-107908	19861121
ZA 8608828	A	19870930	ZA 1986-8828	19861121
DD 258827	A5	19880803	DD 1986-296538	19861121
JP 62155093	A2	19870710	JP 1986-279546	19861122
PRAI US 1985-801014	A	19851122		

AB DNA is introduced directly into plastids and mitochondria of plant protoplasts without the use of pathogens. Plasmid pUCH1, a pUC8 derivative containing the atrazine resistance gene *psbA* from *Amaranthus hybridus* and the chloramphenicol acetyltransferase gene, both under control of the *psbA* promoter, was constructed. Protoplasts from *Nicotiana tabacum*, *Brassica rapa*, or *Lolium multiflorum* were suspended in an osmotically stabilized medium, mixed with pUCH1, and incubated 30 min at .apprx.25°. The cell **suspension** was then heat shocked (5 min at 45°, then 10 s at 0°), PEG (mol. weight 6000) was added to 13%, and the **suspension** was then subjected to electroporation (3 pulses of 1000-3000 V within 10 s). **Transformation** frequency was 10<sup>-3</sup>-10<sup>-2</sup>, but this could be increased to .apprx.1-2% under appropriate circumstances.

L3 ANSWER 25 OF 49 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN DUPLICATE 11

AN 1991:136451 BIOSIS

DN PREV199191072991; BA91:72991

TI OPTIMIZATION OF DELIVERY OF FOREIGN DNA INTO HIGHER-PLANT CHLOROPLASTS.

AU YE G-N [Reprint author]; DANIELL H; SANFORD J C

CS DEP HORTICULTURAL SCI, CORNELL UNIV, GENEVA, NY 14456, USA

SO Plant Molecular Biology, (1990) Vol. 15, No. 6, pp. 809-820.  
CODEN: PMBIDB. ISSN: 0167-4412.

DT Article

FS BA

LA ENGLISH

ED Entered STN: 14 Mar 1991  
Last Updated on STN: 15 Mar 1991

AB We report here an efficient and highly reproducible delivery system, using an improved biolistic **transformation** device, that facilitates transient expression of  $\beta$ -glucuronidase (GUS) in chloroplasts of cultured tobacco **suspension** cells. Cultured tobacco cells collected on filter papers were bombarded with tungsten particles coated with pUC118 or pBI101.3 (negative controls), pBI505 (positive nuclear control) or a **chloroplast** expression vector (pHD203-GUS), and were assayed for GUS activity. No GUS activity was detected in cells bombarded with pUC118 or pBI101.3. Cells bombarded with pBI505 showed high levels of expression with blue color being distributed evenly throughout the whole cytosol of the **transformants**. pHD203-GUS was expressed exclusively in chloroplasts. We base this conclusion on: (i) the procaryotic nature of the promoter used in the **chloroplast** expression vector, (ii) delayed GUS staining; (iii) localization of blue color within subcellular compartments corresponding to plastids in both shape and size; and (iv) confirmation of organelle-specific expression of pHD203-GUS using PEG-mediated protoplast **transformation**. **Chloroplast transformation** efficiencies increased dramatically (about 200-fold) using an improved helium-driven biolistic device, as compared to the more commonly used gun powder charge-driven device. Using GUS as a reporter gene and the improved biolistic device, optimal bombardment conditions were established, consistently producing several hundred transient **chloroplast transformants** per Petri plate. **Chloroplast transformation** efficiency was found to be increased further (20-fold) with supplemental osmoticum (0.55 M sorbitol and 0.55 M mannitol) in the bombardment and incubation medium. This system provides a highly effective mechanism for introducing and expressing plasmid DNA within higher-plant chloroplasts, and the fact that GUS functions as an effective marker gene now makes many

TI Expression of Vitreoscilla haemoglobin in **tobacco** cell cultures  
relieves nitrosative stress in vivo and protects from NO in vitro

L4 ANSWER 10 OF 119 CABA COPYRIGHT 2006 CABI on STN

TI Plastids and stromules interact with the nucleus and cell membrane in  
vascular plants.

L4 ANSWER 11 OF 119 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2006) on STN

TI Possible involvement of the 5'-flanking region and the 5'UTR of  
**plastid accD** gene in NEP-dependent transcription.

L4 ANSWER 12 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI High-frequency transformation of undeveloped plastids in **tobacco**  
**suspension** cells.

L4 ANSWER 13 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN

TI Activation of cell proliferation by brassinolide application in  
**tobacco** BY-2 cells: effects of brassinolide on cell  
multiplication, cell-cycle-related gene expression, and organellar DNA  
contents

L4 ANSWER 14 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Ferredoxin from sweet pepper (*Capsicum annuum* L.) intensifying  
harpinps-mediated hypersensitive response shows an enhanced production of  
active oxygen species (AOS).

L4 ANSWER 15 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI High-frequency transformation of undeveloped plastids in **tobacco**  
**suspension** cells.

L4 ANSWER 16 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Biochemical and molecular inhibition of plastidial carbonic anhydrase  
reduces the incorporation of acetate into lipids in cotton embryos and  
**tobacco** cell suspensions and leaves.

L4 ANSWER 17 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI The potato granule bound starch synthase **chloroplast** transit  
peptide directs recombinant proteins to plastids.

L4 ANSWER 18 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Use of red fluorescent protein from *Discosoma* sp. (dsRED) as a reporter  
for plant gene expression.

L4 ANSWER 19 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Premitotic behavior of mitochondria and plastids in **tobacco**  
**suspension** culture cells.

L4 ANSWER 20 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN

TI Alterations in **chloroplast** ultrastructure of **suspension**  
cultured *Nicotiana tabacum* cells by cadmium

L4 ANSWER 21 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Targeting a nuclear anthranilate synthase alpha-subunit gene to the  
**tobacco plastid** genome results in enhanced tryptophan  
biosynthesis. Return of a gene to its pre-endosymbiotic origin.

L4 ANSWER 22 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN

TI Organellar protein synthesis controls amyloplast formation independent of  
starch synthesis gene expression

L4 ANSWER 23 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

TI Cytochrome b6/f complex induces apoptosis in plant cells.

L4 ANSWER 24 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN

- TI Redistribution of Golgi stacks and other organelles during mitosis and cytokinesis in plant cells
- L4 ANSWER 25 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI **Plastid** tubules of higher plants are tissue-specific and developmentally regulated.
- L4 ANSWER 26 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Increase of pigments, plastoglobuli and the mRNA of a 23 kDa polypeptide of PSII oxygen-evolving complex in a transgenic **tobacco** cell line RP3/2.
- L4 ANSWER 27 OF 119 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN  
TI Auxin and cytokinin have opposite effects on amyloplast development and the expression of starch synthesis genes in cultured bright yellow-2 **tobacco** cells.
- L4 ANSWER 28 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI NAD(P)H dehydrogenase-dependent, antimycin A-sensitive electron donation to plastoquinone in **tobacco** chloroplasts.
- L4 ANSWER 29 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Mechanotransduction molecules in the plant gravisensory response: amyloplast/statolith membranes contain a  $\beta 1$  integrin-like protein
- L4 ANSWER 30 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Photoautotrophic **tobacco** cells adapted to grow at high salinity
- L4 ANSWER 31 OF 119 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN  
TI Hypermethylation of **tobacco** heterochromatic loci in response to osmotic stress.
- L4 ANSWER 32 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Amyloplast formation in cultured **tobacco** cells II: effects of transcription/translation inhibitors on accumulation of starch
- L4 ANSWER 33 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI The effect of tabex and lactofol on some physiological characteristics of oriental **tobacco**.
- L4 ANSWER 34 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Inhibition of the photosynthetic electron transport by pyrethroid insecticides in cell cultures and thylakoid suspensions from higher plants.
- L4 ANSWER 35 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI **Tobacco** (*Nicotiana tabacum*) nuclear transgenics with high copy number can express NPTII driven by the **chloroplast** psbA promoter.
- L4 ANSWER 36 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI C-terminal polypeptides are necessary and sufficient for in vivo targeting of transiently-expressed proteins to peroxisomes in **suspension**-cultured plant cells.
- L4 ANSWER 37 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Method for immobilization of plant cells, organelles, or protoplasts on pectate gels
- L4 ANSWER 38 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Influence of high carbohydrate content on the activity of plastidic and

cytosolic isoenzyme pairs in photosynthetic tissues.

- L4 ANSWER 39 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Stress responses in *Nicotiana sylvestris* L. cells to salinity and high temperature: 1. Accumulation of proline, polyamines, betaines, and sugars
- L4 ANSWER 40 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 15  
TI Production of somatic hybrids between *Daucus carota* L. and *Nicotiana tabacum*
- L4 ANSWER 41 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Adenylate kinase in **tobacco** cell cultures. I. Separation and localisation of different activities.
- L4 ANSWER 42 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI **Plastid**-localized 3-deoxy-D-arabino-heptulosonate 7-phosphate synthase (DS-Mn): the early-pathway target of sequential feedback inhibition in higher plants
- L4 ANSWER 43 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI CDNA NUCLEOTIDE SEQUENCE AND EXPRESSION OF A **TOBACCO** CYTOPLASMIC RIBOSOMAL PROTEIN L2 GENE.
- L4 ANSWER 44 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI THE REPLICATION ORIGIN OF PROPLASTID DNA IN CULTURED CELLS OF **TOBACCO**.
- L4 ANSWER 45 OF 119 CABA COPYRIGHT 2006 CABI on STN  
TI The replication origin of proplastid DNA in cultured cells of **tobacco**.
- L4 ANSWER 46 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI AMYLOPLAST GENOME STRUCTURE AND EXPRESSION IN ZEA-MAYS L. FRESH ENDOSPERM AND ENDOSPERM **SUSPENSION** CULTURES.
- L4 ANSWER 47 OF 119 CABA COPYRIGHT 2006 CABI on STN  
TI Direct cell to cell transfer of organelles by microinjection.
- L4 ANSWER 48 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Response of arogonate dehydratase to changing physiological states of growth in **suspension** cultures of *Nicotiana silvestris*
- L4 ANSWER 49 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI IMMOBILIZATION OF CHLOROPLASTS FROM YOUNG AND OLD LEAVES OF LETTUCE PEA SPINACH AND **TOBACCO**.
- L4 ANSWER 50 OF 119 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Organellar DNA replication in *Nicotiana tabacum* cultured cells

=> d bib abs 21

- L4 ANSWER 21 OF 119 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
AN 2001:492701 BIOSIS  
DN PREV200100492701  
TI Targeting a nuclear anthranilate synthase alpha-subunit gene to the **tobacco plastid** genome results in enhanced tryptophan biosynthesis. Return of a gene to its pre-endosymbiotic origin.  
AU Zhang, Xing-Hai; Brotherton, Jeffrey E.; Widholm, Jack M.; Portis, Archie R., Jr. [Reprint author]  
CS Photosynthesis Research Unit, United States Department of Agriculture-Agricultural Research Service, University of Illinois, Urbana, IL, 61801, USA  
arportis@uiuc.edu  
SO Plant Physiology (Rockville), (September, 2001) Vol. 127, No. 1, pp. 131-141. print.

CODEN: PLPHAY. ISSN: 0032-0889.

DT Article

LA English

ED Entered STN: 24 Oct 2001

Last Updated on STN: 23 Feb 2002

AB Anthranilate synthase (AS), the control enzyme of the tryptophan (Trp) biosynthetic pathway, is encoded by nuclear genes, but is transported into the plastids. A **tobacco** (*Nicotiana tabacum*) cDNA (ASA2) encoding a feedback-insensitive **tobacco** AS alpha-subunit was transformed into two different sites of the **tobacco plastid** genome through site-specific insertion to obtain transplastomic plants with normal phenotype and fertility. A high and uniform level of ASA2 mRNA was observed in the transplastomic plants but not in the wild type. Although the plants with the transgene insertion at *ndhF-trnL* only expressed one size of the ASA2 mRNA, the plants with the transgene incorporated into the region between *accD* and open reading frame (ORF) 184 exhibited two species of mRNA, apparently due to readthrough. The transplastomic plants exhibited a higher level of AS alpha-subunit protein and AS enzyme activity that was less sensitive to Trp-feedback inhibition, leading to greatly increased free Trp levels in leaves and total Trp levels in seeds. Resistance to an AS inhibitor, 5-methyl-Trp, was found during seed germination and in **suspension** cultures of the transplastomic plants. The resistance to the selection agent spectinomycin and to 5-methyl-Trp was transmitted maternally. These results demonstrate the feasibility of modifying the biosynthetic pathways of important metabolites through transformation of the **plastid** genome by relocating a native gene from the nucleus to the **plastid** genome. Very high and uniform levels of gene expression can be observed in different lines, probably due to the identical insertion sites, in contrast to nuclear transformation where random insertions occur.

=> s 12 and regenerat?

L5 179 L2 AND REGENERAT?

=> duplicate remove l5

L6 103 DUPLICATE REMOVE L5 (76 DUPLICATES REMOVED)

=> d ti 1-50

L6 ANSWER 1 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Organogenesis from transformed tomato explants.

L6 ANSWER 2 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Overexpression of the feedback-insensitive anthranilate synthase gene in **tobacco** causes tryptophan accumulation

L6 ANSWER 3 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Cryopreservation of **tobacco** BY-2 by encapsulation simple prefreezing and encapsulation vitrification.

L6 ANSWER 4 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Organogenesis from transformed tomato explants

L6 ANSWER 5 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Genome sequence of Taro bacilliform virus, including a constitutive promoter, and uses for transgene expression, diagnosis, and control of badnaviruses in plants

L6 ANSWER 6 OF 103 CABA COPYRIGHT 2006 CABI on STN  
TI [Effect of exudates of plant cell culture on second-stage juveniles of *Meloidogyne incognita*].  
Efeito de exsudatos de cultura de células de plantas em juvenis de segundo estágio de *Meloidogyne incognita*.

L6 ANSWER 7 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Direct transfer and expression of human GM-CSF in **tobacco**

**suspension** cell using Agrobacterium-mediated transfer system.

- L6 ANSWER 8 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI High-frequency transformation of undeveloped plastids in **tobacco**  
**suspension** cells.
- L6 ANSWER 9 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Efficient and genotype-independent Agrobacterium: Mediated tomato  
transformation.
- L6 ANSWER 10 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Expression and secretion of the heterodimeric protein interleukin-12 in  
plant cell **suspension** culture
- L6 ANSWER 11 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Analysis and localization of the water-deficit stress-induced gene (lp3)
- L6 ANSWER 12 OF 103 CABA COPYRIGHT 2006 CABI on STN  
TI Over-reduction of cultured **tobacco** cells mediates changes in  
respiratory activities.
- L6 ANSWER 13 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Secretory production of hGM-CSF with a high specific biological activity  
by transgenic plant cell **suspension** culture
- L6 ANSWER 14 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Involvement of an acid phosphatase on cell wall **regeneration** of  
**tobacco** protoplasts
- L6 ANSWER 15 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Effect of hormone sequential supplement on somatic embryogenesis  
induction, volatile oil production and plant **regeneration** via  
hypocotyl culture in *Thymus vulgaris* L.
- L6 ANSWER 16 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Enhanced resistance to salt, cold and wound stresses by overproduction of  
animal cell death suppressors Bcl-xL and Ced-9 in **tobacco** cells:  
Their possible contribution through improved function of organelle.
- L6 ANSWER 17 OF 103 CABA COPYRIGHT 2006 CABI on STN  
TI Production of biologically active hG-CSF by transgenic plant cell  
**suspension** culture  
Special issue: Applied biotechnology in Asia.
- L6 ANSWER 18 OF 103 CABA COPYRIGHT 2006 CABI on STN  
TI Transformation of **tobacco** with glucanase-chitinase encoding  
genes using Agrobacterium tumefaciens for disease resistance.
- L6 ANSWER 19 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Use of red fluorescent protein from *Discosoma* sp. (dsRED) as a reporter  
for plant gene expression.
- L6 ANSWER 20 OF 103 CABA COPYRIGHT 2006 CABI on STN  
TI A modified Rpl3 gene from rice confers tolerance of the *Fusarium*  
*graminearum* mycotoxin deoxynivalenol to transgenic **tobacco**.
- L6 ANSWER 21 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Somatic embryogenesis, plant **regeneration** and tropane alkaloids  
production via hypocotyl culture in *Hyoscyamus muticus* L.
- L6 ANSWER 22 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
TI Cre-lox site-specific recombination between *Arabidopsis* and  
**tobacco** chromosomes.
- L6 ANSWER 23 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Methods for the genetic transformation of Lemnaceae with Agrobacterium  
tumefaciens



L6 ANSWER 24 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Localization of the xyloglucan in cell walls in a **suspension**  
 culture of **tobacco** by rapid-freezing and deep-etching techniques  
 coupled with immunogold labelling.

L6 ANSWER 25 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Plant **regeneration** from cell **suspension**-derived  
 protoplasts of *Nicotiana africana*.

L6 ANSWER 26 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Lysine decarboxylase transgenic **tobacco** root cultures  
 biosynthesize novel hydroxycinnamoylcadaverines.

L6 ANSWER 27 OF 103 CABA COPYRIGHT 2006 CABI on STN  
 TI Introduction of a plant intron into the luciferase gene of *Photinus*  
*pyralis*.

L6 ANSWER 28 OF 103 CABA COPYRIGHT 2006 CABI on STN  
 TI Cryopreservation of photosynthetic plant cell **suspension**  
 cultures.

L6 ANSWER 29 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Callose deposition in the primary wall of **suspension** cells and  
**regenerating** protoplasts, and its relationship to patterned  
 cellulose synthesis.

L6 ANSWER 30 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Transgenic plant production from leaf discs of *Morinda arvensis* using  
*Agrobacterium tumefaciens*.

L6 ANSWER 31 OF 103 AGRICOLA Compiled and distributed by the National  
 Agricultural Library of the Department of Agriculture of the United States  
 of America. It contains copyrighted materials. All rights reserved.  
 (2006) on STN  
 TI Transformation of pickling cucumber with chitinase-encoding genes using  
*Agrobacterium tumefaciens*.

L6 ANSWER 32 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Elucidating the mechanism of cortical microtubule reorientation in plant  
 cells

L6 ANSWER 33 OF 103 CABA COPYRIGHT 2006 CABI on STN  
 TI Intergeneric somatic hybrid plants of *Nicotiana tabacum* L. and *Lycium*  
*barbarum* L. by protoplast electrofusion.

L6 ANSWER 34 OF 103 CABA COPYRIGHT 2006 CABI on STN  
 TI Morphogenesis in the **suspension** culture of *Nicotiana tabacum* cv.  
*Virginica*: the effect of kinetin.

L6 ANSWER 35 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Protoplast preparation without centrifugation: Plant **regeneration**  
 of barley (*Hordeum vulgare* L.).

L6 ANSWER 36 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Transformation of ornamental **tobacco** and kale mediated by  
*Agrobacterium tumefaciens* and *A. rhizogenes* harboring a reporter,  
 beta-glucuronidase (GUS) gene.

L6 ANSWER 37 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 14  
 TI Production of somatic hybrids between *Daucus carota* L. and *Nicotiana*  
*tabacum*

L6 ANSWER 38 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Immunobiochemical analysis of a nuclear protein marker for  
**regeneration** potential in higher plants

L6 ANSWER 39 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Effect of culture origin and conditions on duvatrienediol accumulation in  
 shoot cultures of **tobacco**.

L6 ANSWER 40 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI ISOLATION AND CHARACTERIZATION OF UMP SYNTHASE MUTANTS FROM HAPLOID CELL  
 SUSPENSIONS OF NICOTIANA-TABACUM.

L6 ANSWER 41 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Isolation of MTX-resistant cell line NP-19 of Nicotiana plumbaginifolia:  
 phenotypic, genetic and biochemical study

L6 ANSWER 42 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Inhibition of potato virus X (PVX) synthesis in **tobacco**  
 protoplasts by ethidium bromide as standard: A possible screening system  
 for antiviral substances and for transfer of virus resistance genes.

L6 ANSWER 43 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI DNA METHYLATION IS INVOLVED IN MAINTENANCE OF AN UNUSUAL EXPRESSION  
 PATTERN OF AN INTRODUCED GENE.

L6 ANSWER 44 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI Factors influencing Agrobacterium tumefaciens mediated transformation and  
 expression of kanamycin resistance in pickling cucumber.

L6 ANSWER 45 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI GENOTOXICITY OF GUDAKHU A **TOBACCO** PREPARATION I. IN MICE  
 IN-VIVO.

L6 ANSWER 46 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Amitrole tolerance in cell and tissue cultures and **regenerated**  
 plants of Nicotiana plumbaginifolia. II. Selection system:  
**suspension** culture

L6 ANSWER 47 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI EVALUATION OF IMMUNOGLOBULINS FROM PLANT CELLS.

L6 ANSWER 48 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI STABILITY OF SALT TOLERANCE AT THE CELL LEVEL AFTER **REGENERATION**  
 OF PLANTS FROM A SALT TOLERANT **TOBACCO** CELL LINE.

L6 ANSWER 49 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 TI VACUOLAR TARGETING AND POSTTRANSLATIONAL PROCESSING OF THE PRECURSOR TO  
 THE SWEET POTATO TUBEROUS ROOT STORAGE PROTEIN IN HETEROLOGOUS PLANT  
 CELLS.

L6 ANSWER 50 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Production of a triple mutant, chlorophyll-deficient, streptomycin-, and  
 kanamycin-resistant Nicotiana tabacum, and its use in intergeneric somatic  
 hybrid formation with Solanum melongena

=> d bib abs 48 39 34 28 25 10

L6 ANSWER 48 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
 AN 1992:48575 BIOSIS  
 DN PREV199293028550; BA93:28550  
 TI STABILITY OF SALT TOLERANCE AT THE CELL LEVEL AFTER **REGENERATION**  
 OF PLANTS FROM A SALT TOLERANT **TOBACCO** CELL LINE.  
 AU WATAD A A [Reprint author]; SWARTZBERG D; BRESSAN R A; IZHAR S; HASEGAWA P  
 M  
 CS DEP ORNAMENTAL HORTICUL, INST FIELD GARDEN CROPS, VOLCANI CENTER, BET  
 DAGAN 50 250, ISRAEL  
 SO Physiologia Plantarum, (1991) Vol. 83, No. 2, pp. 307-313.  
 CODEN: PHPLAI. ISSN: 0031-9317.  
 DT Article  
 FS BA

LA ENGLISH  
ED Entered STN: 13 Jan 1992  
Last Updated on STN: 13 Jan 1992  
AB Plants were **regenerated** from both the wild type and a stable NaCl-tolerant line of **tobacco** cells (*Nicotiana tabacum/gossii*). The **regeneration** process was much more difficult in the case of the NaCl-tolerant line and was only successful in the absence of NaCl. These plants differed morphologically from those **regenerated** from the wild type cell line, exhibiting abnormally short internodes, small leaves and reduced growth. Cell **suspension** cultures derived from plants **regenerated** from the stable NaCl-tolerant line retained a high level of tolerance to salt. The NaCl-concentration required to reduce fresh and dry weight gain by 50% was about twice that observed in the case of the cells obtained from wild type plants. The results presented here, together with those of Watad et al. (1985), indicate that resistance to salt is operating and stable at the cellular level before and after plant **regeneration**. When the **regenerated** plants were grown in increasing levels of salt their growth response was not clearly different from that of the plants **regenerated** from the wild type cell line. However, the survival of plants on high concentrations of NaCl tended to be higher in the case of plants **regenerated** from the NaCl-tolerant cell line.

L6 ANSWER 39 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
AN 1993:100091 BIOSIS  
DN PREV199395055287  
TI Effect of culture origin and conditions on duvatrienediol accumulation in shoot cultures of **tobacco**.  
AU Miedzybrodzka, Marysia B. W.; Yeoman, Michael M. [Reprint author]  
CS Div. Biol. Sci., Inst. Cell Molecular Biol., Univ. Edinburgh, Mayfield Rd., Edinburgh EH9 3JH, Scotland, UK  
SO Journal of Experimental Botany, (1992) Vol. 43, No. 256, pp. 1419-1427. CODEN: JEBOA6. ISSN: 0022-0957.  
DT Article  
LA English  
ED Entered STN: 9 Feb 1993  
Last Updated on STN: 10 Feb 1993  
AB A comparison of morphology, trichome type and duvane accumulation of **tobacco** shoot cultures originating from seedlings, callus and cell **suspension** cultures incubated on a range of cytokinin concentrations is presented. A method for the extraction and HPLC analysis of duvatrienediols from cultures is described. Duvatrienediols (DVTs) were not detected in callus or cell **suspension** cultures and were only detected in seedling-derived shoot cultures. Shoot development was dependent on explant type probably as a result of pre-exposure of callus and **suspension** cells to high auxin concentrations. Low cytokinin levels promoted shoot development whilst high cytokinin levels increased the number of shoots **regenerated** but retarded their development. DVT accumulation occurred only in 'normally' developed shoots with trichomes. Growth of shoot cultures in liquid medium was inhibitory to the accumulation of DVTs. Optimum conditions for the accumulation of DVTs were shown to be incubation of seedling-derived shoot cultures on media containing 10<sup>-6</sup> M BAP solidified with agar. The yield was 120 µg g<sup>-1</sup> fr. weight which is comparable to greenhouse-grown material. Both alpha- and beta-DVT were detected in a ratio of 5:1. The relationship between trichomes and DVT accumulation is discussed with reference to the roles of cultures origin, cytokinin, trichome type and environmental effects.

L6 ANSWER 34 OF 103 CABA COPYRIGHT 2006 CABI on STN  
AN 96:46247 CABA  
DN 19960703336  
TI Morphogenesis in the **suspension** culture of *Nicotiana tabacum* cv. Virginia: the effect of kinetin  
AU Khatoon, K.; Khalida Khatoon  
CS Department of Botany, University of Karachi, Karachi 75270, Pakistan.  
SO Pakistan Journal of Botany, (1994) Vol. 26, No. 2, pp. 383-392. 19 ref.

ISSN: 0556-3321

DT Journal

LA English

ED Entered STN: 19960430

Last Updated on STN: 19960430

AB Morphogenesis was observed in **suspension** cultures of *N. tabacum* cv. *Virginica*, established from epidermal tissue-derived callus on medium supplemented with  $5 \times 10^{-6}$  M NAA alone or with  $5 \times 10^{-7}$  M kinetin, when subcultured on auxin-lacking morphogenetic medium containing kinetin. The mode of **regeneration** was dependent on kinetin concentration. Low kinetin concentration favoured root and embryo-like structure development, while high concentrations induced tightly aggregated clusters of shoots. The **regenerated** structures showed a general tendency towards a gradual increase in shoot number and a decrease in size at increasing concentrations of kinetin. Histological study of the embryo-like structures revealed their resemblance to zygotic embryos.

L6 ANSWER 28 OF 103 CABA COPYRIGHT 2006 CABI on STN

AN 97:65290 CABA

DN 19971605119

TI Cryopreservation of photosynthetic plant cell **suspension** cultures

AU Luo XiMing; Widholm, J. M.; Luo, X. M.

CS Department of Crop Sciences, University of Illinois, Edward R. Madigan Laboratory, 1201 W. Gregory, Urbana, IL 61801, USA.

SO Plant Cell, Tissue and Organ Culture, (1997) Vol. 47, No. 2, pp. 183-187. 17 ref.

ISSN: 0167-6857

DT Journal

LA English

ED Entered STN: 19970612

Last Updated on STN: 19970612

AB Attempts were made to cryopreserve in liquid nitrogen six different photomixotrophic **suspension** cultured lines of five different species: *Amaranthus powellii*, *Datura innoxia* [*D. fastuosa*], *Glycine max*, *Gossypium hirsutum* and *Nicotiana tabacum* x *N. glutinosa* fusion hybrid. Only the *D. innoxia* line, DAT, and the *G. max* line, SB1, were successfully recovered as viable, growing, dark green cultures. The successful method utilized a preculture treatment of from 2 to 8 days in a medium containing 3% starch and 3% sorbitol for DAT, and 3% sucrose and 3% sorbitol for SB1 cells. The cells survived if frozen with 10% dimethyl sulfoxide (DMSO) and 9.1% sorbitol or with 10% DMSO and 8% sucrose. Following a programmed slow-cooling, the cells were thawed at 40[deg]C and could be recovered directly when added to fresh liquid medium. Cryostorage of these lines will save labour and prevent further genetic changes from occurring in these unique **suspension** cultures.

L6 ANSWER 25 OF 103 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on

AN 1999:213069 BIOSIS

DN PREV199900213069

TI Plant **regeneration** from cell **suspension**-derived protoplasts of *Nicotiana africana*.

AU Rakosy-Tican, Lenuta [Reprint author]; Menczel, Laszlo

CS Department of Ecology and Genetics, Babes-Bolyai University, Clinicilor Str. 5-7, RO-3400, Cluj-Napoca, Romania

SO Plant Cell Tissue and Organ Culture, (1998) Vol. 54, No. 2, pp. 93-95. print.

CODEN: PTCEDJ. ISSN: 0167-6857.

DT Article

LA English

ED Entered STN: 26 May 1999

Last Updated on STN: 26 May 1999

AB Plants have been **regenerated** from *Nicotiana africana* Merxm. protoplasts isolated from cell suspensions. Two different sequences of media were assayed, one usually used to **regenerate tobacco** mesophyll protoplasts (K3,RMO) the other previously recommended for potato mesophyll protoplast **regeneration** (W-S-S,

ST-1, ST-2, S-3). Only the media for potato protoplasts were efficient for African **tobacco** plant **regeneration**. The **regeneration** efficiency was 6.3 plants per 1000 plated protoplasts.

L6 ANSWER 10 OF 103 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:195567 CAPLUS  
DN 138:352803  
TI Expression and secretion of the heterodimeric protein interleukin-12 in  
plant cell **suspension** culture  
AU Kwon, T. H.; Seo, J. E.; Kim, J.; Lee, J. H.; Jang, Y. S.; Yang, M. S.  
CS Institute of Basic Sciences, Chonbuk National University, Jeonju, 561-756,  
S. Korea  
SO Biotechnology and Bioengineering (2003), 81(7), 870-875  
CODEN: BIBIAU; ISSN: 0006-3592  
PB John Wiley & Sons, Inc.  
DT Journal  
LA English  
AB It has been suggested that plant cell culture is the most suitable system  
for producing small-to-medium quantities of specialized, expensive, and  
high-purity proteins. Here, we report that a heterodimeric protein, human  
interleukin-12 (hIL-12), was expressed and secreted into culture medium in  
a biol. active form. A transgenic plant expressing hIL-12 was constructed  
by sexual crossing of plants that expressed each subunit of the protein.  
From a piece of transgenic plant, callus was induced and cell  
**suspension** culture was established. The biol. activity and amount  
of hIL-12 secreted into culture medium were analyzed using bioassays and  
ELISA. Anal. of cellular localization demonstrated that the protein was  
secreted into the culture medium together with its intrinsic signal  
peptide.  
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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STN INTERNATIONAL SESSION SUSPENDED AT 16:54:40 ON 17 MAR 2006